



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/583,962

04/13/2007

Anders Eriksson

4208-43

7385

23117

7590

04/01/2009

NIXON & VANDERHYE, PC
901 NORTH GLEBE ROAD, 11TH FLOOR
ARLINGTON, VA 22203

EXAMINER

BEYEN, ZEWDU A

ART UNIT

PAPER NUMBER

2419

MAIL DATE

DELIVERY MODE

04/01/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/583,962	Applicant(s) ERIKSSON ET AL.	
	Examiner ZEWDU BEYEN	Art Unit 2419	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06/21/2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>06/21/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-12, have been examined and are pending.

Information Disclosure Statement

2. An initialed and dated copy of applicant's IDS form 1449 submitted 06/21/2006, is attached to the instant office action.

Claim Objections

Claims 5 and 8 are objected to because of the following informalities: claim 5 recites the phrase "sitting the edge of the network". The phrase should be spelled as "sitting at the edge of the network" Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the phrase "in response to this". It is not clear as to what the word "this" is referring to.

Claim 5 recites the phrase "filtering out control messages and tunneling them to the midcom agent". The origin of the control messages is not clear.

In claims 6 and 7, the phrase "the control messages" lacks antecedent basis.

In claim 9, the phrase “the signaling message” lacks antecedent basis.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-2, 4-10, and 12 are rejected under 35 U.S.C. 102(e) as being anticipated by Mitchell to **(US-PGPUB-20030093481)**.

Regarding claim 1, Mitchell teaches controlling the individual packet flows from a common IP based control plane

provided with midcom agent(**i.e. fig.6. box 18, Call servers/proxies**) (**fig.6 and fig.7 discloses controlling a call set-up by the call server via middlebox**)

each flow(**i.e. call set-up message**) registering its presence in each middlebox(**i.e. fig.6, middlebox 1**) it encounters on

its way from its source(**fig.6 terminal A**) to its destination (**fig.6 , terminal B**) at the user plane (**fig.7 step 62, discloses the Middlebox 1 sends a public addresses and port allocated for the call that is requested to be set-up by the terminal A, to the call server. Thus, the call set-up**

Art Unit: 2419

message identity is registered in the Middlebox 1)

middlebox (**i.e. middlebox 1**) registering itself and the mobile flows it handles at an midcom agent (**i.e. Call server**) ([0062] **Discloses terminal A sends its call set-up request to middlebox 1 on route to the call server 18. Middlebox 1 adds its own identity to the call set-up message and forwards it to the call server**) at the control plane with which they communicate using an extended midcom signalling protocol(**i.e. fig.6 discloses a signaling path**)

the midcom agent(**i.e. call server**) , now having knowledge of the registered flows, signaling control orders to the middleboxes that registered, said orders pertaining to the handling of the flows at the respective middleboxes (**[0062] Discloses terminal A sends its call set-up request to middlebox 1 on route to the call server 18. Middlebox 1 adds its own identity to the call set-up message and forwards it to the call server. The call server then instructs the middlebox 1 to set up a binding**)

Regarding claim 2, Mitchell teaches the midcom agent (**i.e. call server**) sending its control orders to an individual flow via the middlebox at which the packet flow registers(**[0062] discloses terminal A sends its call set-up request to middlebox 1 on route to the call server 18. Middlebox 1 adds its own identity to the call set-up message and forwards it to the call server. The call server then instructs the middlebox 1 to set up a binding**).

Regarding claim 4, Mitchell teaches the midcom agent (**i.e. call server**) using the identity of the middlebox (MID) that registered in order to find the functionality the middlebox has and provide

Art Unit: 2419

a corresponding control order that it sends to the middlebox(**[0062] discloses Middlebox 1 adds its own identity to the call set-up message and forwards it to the call server. The call server then instructs the middlebox 1 to set up a binding; this instruction is according to the functionality of the middlebox).**

Regarding claim 5, Mitchell teaches the midcom agent (i.e. call server) controls a number of middleboxes (i.e. middlebox 1 and middle box 2) provided in a network (fig.6 discloses middlebox 1 and middlebox 2 that are control by the call server to execute a call set-up) an ingress middlebox (IN) (middlebox 1 and middlebox 2) , sitting at the edge of the network where an individual flow enters the network, filtering out control messages and tunnelling them to the midcom agent(i.e. call server)(fig.6 discloses middlebox 1 and middlebox 2 are sitting at the edge of a network, call set-up message coming from terminal A pass through Middlebox 1 then to the call server. Call server sends control message to middlebox 1) the midcom agent(i.e. call server) in response sending control messages to each of the middleboxes (i.e. middlebox 1 and middlebox 2) it controls, this dividing the IP layer into an IP control layer(i.e. fig.6 address realm D3) and an IP user plane (i.e. FIG.6 , Address realm D1, and Address Realm D2).

Regarding claim 6, Mitchell teaches the midcom agent uses a routing table to send the control messages to the respective middleboxes on the IP control plane using an extended midcom protocol(fig.6 discloses a signaling path) ([0062] disclose terminal A sends its call set-up request to middlebox 1 on route to the call server 18. Middlebox 1 adds its own identity to

Art Unit: 2419

the call set-up message and forwards it to the call server. The call server then instructs the middlebox 1 to set up a binding. Thus, the call server inherently has some sort of middlebox's identity storage).

Regarding claim 7, Mitchell teaches the midcom agent (i.e. call server) sends the control messages to the middleboxes (middlebox 1 and middlebox 2) by first sending them to the ingress middlebox (IN) from which they are sent in the same channel as the user data (fig.6 and par [0062] disclose terminal A sends its call set-up request to middlebox 1 on route to the call server 18. Middlebox 1 adds its own identity to the call set-up message and forwards it to the call server. The call server then instructs the middlebox 1 to set up a binding).

Regarding claim 8, Mitchell teaches forwarding control messages (i.e. call set-up message) from one domain to another by having an ingress middlebox (i.e. middlebox 1), sitting the edge of a network which an individual flow enters([0062] Discloses Middlebox 1 adds its own identity to the call set-up message and forwards it to the call server),

filtering out control messages and tunnelling them to the midcom agent (i.e. call server) ([0062] Discloses Middlebox 1 adds its own identity to the call set-up message and forwards it to the call server),

the midcom agent(i.e. call server) forwarding them to an egress middlebox (i.e. middlebox 2) at which the flow exits the network(fig.7 step 62, discloses once the call server receives public addresses and port allocated of the call set-up message that is requested by terminal A,

Art Unit: 2419

from the Middlebox 1. Then, the call server forward the message to terminal B via middlebox 2)

Regarding claim 9, Mitchell teaches returning the signalling message to the ingress middlebox (IN) **(i.e. middlebox 1)** from where it is forwarded along same path as the user data flow **(fig.6 discloses a signaling path).**

Regarding claim 10, Mitchell teaches several midcom agents **(i.e. fig.6 box 18 discloses call servers/proxies)** provided at the IP control plane **(i.e. fig.6 Address Realm D3)**, simultaneously controlling one and the same flow**(fig.6 and [0062] discloses the call servers/proxies controlling the call set-up)**

Regarding claim 12, Mitchell teaches a plurality of IP based networks **(i.e. fig.6 Address Realm D1 and Address Realm D2)** and a session controller **(i.e. call server)** for set up of a communication path that traverses selected one of the networks**(fig.6 discloses setting a call between terminal A and terminal B),**

each selected network having an ingress middlebox (IN)**(i.e. fig.6 middlebox 1 and middlebox 2)** at which a user flow enters the network and an egress middlebox (EN) **(i.e. fig.6 middlebox 1 and middlebox 2)** at which the flow exits the network,

a midcom agent **(i.e. call server)** sitting at an IP control plane **(i.e. Address Realm D3)** , a plurality of middleboxes**(i.e. fig.6 middlebox 1 and middlebox 2)** sitting at an IP user plane**(i.e. fig.6 Address Realm D1 and Address Realm D2)**, an extended midcom protocol allowing for communication between the midcom agent and the middleboxes**(fig.6 discloses a signaling**

Art Unit: 2419

paths that the call server and the middleboxes communicate through)

the middleboxes being adapted to detect a user flow (**[0062] disclose terminal A sends its call set-up request to middlebox 1 on route to the call server 18)** and register its identity (FID) at the midcom agent(**i.e. call server**) together with the identity of the middlebox at which the flow was detected(**[0062] Discloses Middlebox 1 adds its own identity to the call set-up message and forwards it to the call server**), the midcom agent (**i.e. call server**) in response to a combined flow and middlebox registration sending a flow control order to the middlebox over the extended midcom protocol, a flow control order instructing the middlebox how to handle the detected flow (**[0062] Discloses the call server instructs the middlebox 1 to set up a binding**).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Art Unit: 2419

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 3 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mitchell, in view of Ramsayer (US6985961).

Regarding claim 3, Mitchell does not teach a midcom agent sending its control orders to an individual flow via another midcom agent than that at which the flow registered

However, Ramsayer teaches a midcom agent (**i.e. fig.1, user agent**) sending its control orders to an individual flow via another midcom agent (**i.e. fig.1, composite user agent**) than that at which the flow registered(**abstract discloses a composite user agent acting on behalf of a group of member user agents in a communication network**).

Therefore it would have been obvious to one ordinary skill in the art at the time the invention was made to enable the system of Mitchell sending a control orders via another midcom agent, as suggested by Ramsayer. This modification would benefit the system of Mitachell by providing the system with a standby controlling agent that will function on behave of one of the controlling agents incase malfunction occurs.

Regarding claim 11, Mitchell does not teach a midcom agent with a plurality of control function sets each set relating to the operation of an individual middlebox and comprising control orders for control of the operation of the corresponding middlebox

However, Ramsayer teaches a midcom agent (**i.e. fig.1, composite user agent**) with a plurality of control function sets (**abstract discloses behaves and is viewed as both a registrar and a proxy server**), each set relating to the operation of an individual middlebox (**i.e. fig.1, user agent**), and comprising control orders for control of the operation of the corresponding middlebox (**i.e. fig.1, user agent**) (**col.2 lines 21-25 discloses all incoming SIP requests from the network are directed to the composite user agent before being passed to the appropriate member user agent. The member user agents locally configure themselves to send all SIP requests to the composite user agent**)

Therefore it would have been obvious to one ordinary skill in the art at the time the invention was made to modify the system of Mitchell by including a midcom agent with a plurality of control function set that are related to the operation of the middleboxes, and controlling the operation of the corresponding middleboxes accordingly, as suggested by Ramsayer. This modification would benefit the system of Mitchell to efficiently control the network transactions.

Conclusion

Art Unit: 2419

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. (See PTO-892).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ZEWDU BEYEN whose telephone number is (571)270-7157. The examiner can normally be reached on Monday thru Friday, 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on 1-571-272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Z. B./

Examiner, Art Unit 2419

/Hassan Kizou/

Supervisory Patent Examiner, Art Unit 2419